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*The WISDOM of GOD manifested in the Works of the Creation; in Two Parts. By John Ray, Fellow of the Royal Society. The Second Edition very much enlarged. London, Printed for Samuel Smith: in 8°. 1692.*

**T**HE Design of our Author in this Treatise, is manifest by the Title it self, which he endeavours to make good from several Heads, as first, from the *Multitude* of the *Creatures*, coelestial and terrestrial, and from the possibility, that the fixt Stars may be so many Suns, attended with the like Train as we find our Center, the Ruler of our Motions, is accompanied with. Hence he proceeds to guess at the number of *Terrestrial Bodies*, animate and inanimate: Of *Beasts* known and described about 250; of *Birds* about 500; and of *Fishes* the like number; *Insects* are more numerous; of *Butterflies* and *Beetles* 300; and if *Caterpillars* are reckon'd as a distinct Species, that number is doubled, and the *Fly-kind* at least equals both the other: *Creeping Insects* very numerous. In short, if as he conjectures the British *Insects* amount to 2000, the total sum of those of the whole Earth may be 20000, if they hold the same proportion as the British and Foreign plants do. Of *Plants*, he thinks, there are not fewer in the World than 18000: And lastly, of *Fossiles*, *Stones*, and the like, he gives no guess at their number, but concludes it very great.

Next he proceeds to censure the *Aristotelian*, *Epicurean*, and *Cartesian Hypotheses*, as incapable of explaining the *Phænomena* of Nature; and for the formation of the Bodies of Animals, he has recourse to the *Sensitive Soul*, if it be immaterial; but if material, to a *Plastic Nature*. And here he treats in short of the Souls of *Brutes*. At the 48th Page he seems to incline to the *Atomical Hypothesis*, as to the ranging inanimate Bodies, and explaining some of their Operations. Our Author then enters into a more particular Account of some of the *Creatures* as the *Sun*, *Moon*, &c. and holds the *gravitating Principle* to be the Band that keeps the *Universe* in order, though he attempts not to explain what it is, or how caused. He proceeds to the *Uses* of the four *Elements*, as *Fire*, *Air*, *Water*, and *Earth*, hinting at the life of the *Fetus in utero*, pag 65. and from the motion of the *Water* gives the reason why most *Water-Plants* grow flat, their edges more easily cutting the *Stream*, than if they were round. He then touches upon the *Meteors*, as *Rain*, *Wind*, &c. and next of inanimate Bodies; where, as to formed Stones, he determines not the business of *Petrification*, enlarging upon the use of the *Lodgment*. He proceeds to *Metals*.

As to *Plants*, he refers their *Constancy* in continuing their Species to a *Plastic Nature*, as well as their *Stature*, *Figure*, and the like, and ends with the uses of the several parts thereof.

Treating of *Animals*, he thinks it probable, that the *Females* as well of *Beasts* as *Birds*, have in them, from their first formation, the *Seeds* of all the young they shall ever produce; and sets it down as a manifest Argument of Divine Providence, that *Birds* are not *viviparous*, so as that they have no hindrance in their flying and way of living: Observing further the strange Memory and Order *Birds* have in feeding their *Young*, not omitting or forgetting one, but feeding them all gradually; with several other curious Remarks of the building of their *Nests*, *Erooding*, &c. and by the way treating of the *Juice* afforded by the *Glands* of the *Stomach*, he hints at the notable *Virtue* of the *insipid Saliva*, in its killing *Quicksilver*, fermenting *Dough*, taking away *Warts*, &c. He admires the Curiosity and Contrivance of the *Honeycomb*, and particularly the *Treec-Bee*, which *Insect* he describes, with the manner of its generation. He proceeds to *Quadrupedes*, and concludes this Head with the fitness of the *Parts* of several *Animals*, for their particular *Natures* and ways of living, *viz.* in the *Mole*, *Antbear*, *Chamælion*, *Woodpecker*, and *Swallow*; observing that the reason why *Swallows* fly low before Rain may be from the *Insects*, which they prey upon, which being sensible of the *Vapors* of the superior Regions of the *Air*, descend nearer to the *Earth* at such times. Next, that the *Parts* of *Birds* are all fitted for flying, as those of *Fish* are for swimming; observing, that though no *Land-Fowl* have short *Necks* and long *Legs*, yet the contrary is seen in many *whole-footed Water-fowl*, Nature providing them with a long *Neck*, that they may fish therewith at the bottom of the *Water*.

Next our Author answers an Objection too long to be here inserted; and having touch'd upon some other Heads, as the Discoveries made by *Dr. Hooke*, and *Mr. Lewenhoek*, by the *Microscope*, in minute *Animals* and their parts, he proceeds to some *Practical Inferences*, and having selected two particular *Pieces* to insist more largely upon, *viz.* The whole *Body* of the *Earth*; as to which, he remarks its *Spherical Figure* fitted for *Motion* and *Strength*, and shews its *diurnal* and *annual motions* no way dissonant to the *Scriptures*. Coming to the outward face thereof, he instances in the admirable use of some *Plants*, and concludes this first Part with the necessity of *Mountains*, for the production of *Springs* and *Minerals*, the *Conveniences* for *Habitation*, delightful *Prospects*, production of variety of *Plants*, entertainment and maintenance of several *Beasts*, *Birds*, and *Insects*, with the hinderling the evagation of *Vapours* to the *North* and *South*, from the *hot Countries*, where they are most needful.

In the *Second Part* of this *Work* our Author prosecutes the same subject from the consideration of *Man*, and that from eight general *Observations*, 1<sup>st</sup>, Of his *Erect Posture*, which he shews to be natural from the length of the *Legs*, and strength of their *Muscles*, position of the *Face*, &c. 2<sup>dly</sup>, In that nothing is *wanting*, or *redundant*. 3<sup>dly</sup>, The *Parts* are most conveniently placed for use and ornament. 4<sup>ly</sup>, The *Provision* made for the *Security* of the *Principals*, as the *Heart*, *Brain*, and *Lungs*. 5<sup>ly</sup>, The most *useful parts* being provided against *Accidents*, by their being in *pairs*; and the many *Conveniences* they have to get rid of what offends them. 6<sup>ly</sup>, The

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Conciseness observed in the principal parts, which cannot proceed from Chance, whereas there is a great variety in the less necessary, as in the Ramifications of the Veins, Arteries, and Nerves, wherein Nature seems to sport her self. 7ly, Pleasure annext to those actions that support the *individuum*, as Eating, Drinking, and those that continue the Species. 8ly, The *Magnitude of Intentions* to be regarded in the forming of our Bodies for the various motions and operations thereof. Coming to particulars, he observes the great *Variety* in the *Faces* of Men, and the *Capacity* of the Head from its Spherical Figure, to contain a large Brain: In the next place he enlarges on the *Eye*, and its several parts endeavouring at a reason why Objects seem not inverted, though they are so painted on the *Retina*, which seems to need a farther Explication. He observes from *Nuck's* Experiment on a Dog's-Eye, that the Aqueous Humor is repairable, as being most subject to Casualties. As to the *Ear*, he observes, that If the external Ear (which by degrees contracts and draws the sound inwards) be cut off, the Hearing has been much impaired, if not quite spoiled; and takes notice of the alteration of its Figure from the distance of the Sound he refers for a more particular Explication of this part, and its use to *Monfieur Du Verney's* Treatise of the Ear. Next as to the *Teeth*, having recapitulated Mr. *Boyl's* Seven Observations of them, he adds, That the *Molares* are placed nearest to the Center of Motion, where there is the greater strength required. And lastly, The motion of the *Jaws* is transverse, as most proper for chewing. Treating of the *Tongue*, he notes with *Des Cartes*, that Brutes have no cogitation since none of them can be brought to signify their Conceptions by artificial Signs, either Words or Gestures, the Signs which they use being motions of some of the Passions. Having touched at the use of the *Sativa*, for digestion of the Food, he observes the *Annular Formation* of the Windpipe, whose Rings are not entire, lest it should press too hard upon the Gullet. Treating of the *Heart*, he allows it not to be conservatory of the vital Flame; the Lungs serving rather for the accension and maintaining of that Flame, but shews its admirable contrivance from its Muscles, Valves, and the like, to be a proper *Machine* to continue the *circulation* of the Blood, assisted much by the quadruple Coat of the Arteries, especially its third or muscular one, first discovered by Dr. *Willis*, effecting a Constriction, or kind of *Peristaltick* Motion. Having treated of the Structure and Uses of the *Hand*, and of the *Vertebræ* of the Back-bone, he observes the Provision that is made for the more easie *motion* of all the *Joints*, and prevention of heating and fretting, by an oily and a mucilaginous Juice. There are several other Remarks on the *Thorax*, *Belly*, *Bladder*, *Liver*, *Kianey*, and the like, which I omit; and coming to the *Bones* and *Muscles*, he affirms, that there seems to be therein more *Geometry* than in all the artificial Engines in the World. Which he leaves to the *Mathematicians* to handle, as has been attempted by *Borelli* and others.

Our Author waves the consideration of the *Formation* of the *Fetus*, and supposes Impregnation to proceed from some *contagious Vapour*, or *subtile Effluvia* of the Male Seed. Which he believes have a great stroke in generation, in that the Mule and other Creatures most resemble the Male Parent. Taking occasion here to speak of *Spontaneous Generation*, he affirms, that there is no such thing in Nature; but that all, nay, the most contemptible *Insects*,

generated by the Animal Parents of the same Species. The same he confirms as to *Plants*, by an Experiment of *Malpighius*, who covered Earth taken from a deep place with Silk many times doubled, which though it admitted the Air and Water, yet produced not any Plant ; and concludes, that a spontaneous Generation of Animals and Plants will be found, upon due examination, to be nothing less than a *Creation* of them. He enforces this Opinion by the Suffrages of the most Experienc'd in this matter, as *Swammerdam*, *Malpighi*, *Lister*, &c. For this he brings several Arguments, and answers the most material Objections, and as for the raining of *Frogs* and other *Insects*, he believes it with the same Faith, as that *Spanish Gennets* are begotten by the Winds, since each Story is attested, as he says, by good Authors, and he that can swallow this, hath, he thinks, made a fair step towards believing it may rain Calves too, since it is reported that one fell out of the Clouds in *Avicenna's* time. Here he takes notice of the long *Venereal Embrace* of the *Frogs*, for at least a whole month indesinently. As to *Insects* produced in Animal Bodies, he concludes them not spontaneous, from their exact agreement, and perpetual similitude, in the shape and figure of their Bodies, and concludes, that the Eggs which produce them are taken in with the Food of the Animal in which they are found.

In the next place he gives several *Miscellaneous Observations* of the Structure, Actions, and Uses of some Parts of Animals, omitted in the precedent Discourses ; as, That God effects the same thing by different means instanced in the Varieties of Digestions in the Stomachs of several Animals, and the like. By the way he says, that *Swine* swallow in the Mire, and *Poultry* bask themselves in the Dust, not to cool themselves, but to destroy and choak the *Lice* and other importunate *Insects*. Our Author has other Observables touching *Respiration*, the *Foramen Oval* in amphibious Animals, the *Epiglottis*, which part the *Elephant* has not, neither needs it, there being no Communication betwixt his *Lungs* and *Oesophagus*. Some Instances of the Sagacity of the *Tortoise* ; of theirs and the *Armadillo's* Armour, which latter contracts it self into a round Ball, by the means of a notable Muscle on each side, consisting of many *Fibres*, decussating each other like the letter X. Next he hints at the Uses of the *Fat*, and the *nictitating Membrane* in the Eyes of Beasts, and Birds, transcribing a large account of this part out of the *Parisian Anatomy* of Animals. Next of the sudden growth of *Fly-Fishes*, which he finds necessary for their production ; with some Particularities touching other Animals. He conjectures, that *Cartilaginous Fish* raise and sink themselves to any Depth, by the Water which they take in and let out again at pleasure, by the help of Muscles for that purpose, at two holes in the lower part of their Belly.

Speaking of *Plants*, he says, it is the descending Juice which is taken in by the Leaves that nourishes both the *Fruit* and *Plant*. There are several other particulars worth the Reader's perusal, and after all he concludes with many practical Inferences and Deductions from the whole.

The whole Treatise, though it be of a Philosophical Nature, seems to be of great use for such as make popular Discourses ; and as it is not far above the Capacity of the Master, so there are several Passages that will at least give hints and assistance to the greatest *Theologues*.

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*Three Physico-Theological Discourses, concerning, 1. The Primitive Chaos, and Creation of the World. 2. The General Deluge, its Causes and Effects. 3. The Dissolution of the World.* By John Ray, S. R. S. *The Second Edition.* Lond. printed for Samuel Smith, 80. 1693.

IN the first Discourse concerning the *Chaos*, (the Notion whereof our Author asserts in his Preface to be divinely revealed) he produces the Testimonies of several Heathen Writers, to prove the production of all things out of it, (which they looked upon self-existent, and unproduced, as he thinks, erroneously) which Opinion he shews consonant to *Moses*, there being a gradual formation of things related, which were all produced, as he supposes, out of *præ-existing Seeds*, which he says were first created by God. As to the separation of the *Land and Water*, which at first covered the face of the Earth: He proposes, that it might be effected by the same Causes which raise Mountains now, viz. *Subterraneous Fires* and *Flatus's*, such as *Ovid* in the 15th *Metamorph.* describes near the City *Træzen*; and a later Instance near *Puzzuolo*, of a new Mountain; which last he describes from his own observation. He mentions several other Hills raised, and now oft-shaken by Earthquakes and *Subterraneous Fires* as the *Andes*, *Aips*, &c. Taking notice of an extraordinary one, which in the time of *Valentinian* shook the whole World, with some Passages out of *Strabo* and others, he shews from a Passage out of *Julius Ethnicus*, and Father *Kircher*, that there may be a Communication from one burning Mountain to another, though at a great distance, by Vaults under the *Sea*; the bottom whereof, except where it is Rocky, he by the way asserts to be very even. Of *Submarine Plants* he observes, there are none at great depths for want of Air. This depth usually answers the heighth of the adjoining Hills and Land. He treats of the use and necessity of Mountains. Coming in the next place to the *Creation of Animals*, he proposes some Questions, as, Whether *God* made at first the Seeds only of all *Animals*, and scatter'd them over the Earth, or made the first sett of *Animals* in perfection, giving each *Species* a power to generate? then, Whether he made a great many of a sort, or only two, a *Male* and a *Female*? And from these another Question arises, Whether the *Ovaries* of the first *Animals*, actually included in them the whole number, to be produced by that *Species* to the end of the World? Which he declines to, and seems to make the *Female* the chief Agent in Generation; each Egg containing an *Animacule*, the Arguments for and against this *Hypothesis* make up the Remainder of this Discourse: Though he confesses himself not fully satisfied, as to all Doubts that may be raised, but ends with his Reasons for dissenting from *Lewenhoek*, that all *Animals* proceed from an *Animacule* in the *Male* *Sperm*.

The Author takes the same method in the Second Discourse of the General Deluge, bringing first the Testimonies of the ancient Heathen Writers concerning it, endeavouring to shew, that by Deucalions they understood Noah's Flood, which they also make universal, though he owns there was in Thessaly such a particular Flood as they call Deucalion's, about 700 years after Noah's, and that of Ogyges in Attica, about 230 years before Deucalions. Proceeding to treat of the Causes of this general Flood, rejecting that of the Airs being turned into Water, alledged by Kircher in *Arca Noe*, he pitches upon those two mentioned in *Genes*, the breaking up the Fountains of the great deep, and opening the Windows of Heaven, by the last of which he supposes a great quantity of Water may be afforded, taking the Waters above the Firmament to be Waters lodged above the inferiour Regions of the Air. By the Fountains of the Deep, he understands the subterraneous Waters. As to the Expence of the Sea-water by Vapour, he concludes the Receipts of the Mediterranean to fall short of its expence. He questions whether there be any under-Currents in the Sea, and proceeding to his present Subject of the breaking up the Fountains, he by the way dissent from Dr. Plot, in his Nat. Hist. of Staffordshire, *That the Valleys are as much below the Surface of the Sea as the Mountains are above it*, since the Rivers run down from those Valleys into the Sea; and seems dissatisfied with the Opinion of an inferiour circulation of Water, as not sufficiently demonstrated how it can be performed. Having observed that the Hills and Dry Land is so equally dispersed over the World, as to counterbalance each other, so that the Centers of Motion, Gravity, and Magnitude concur in one, he discourses occasionally of the original of Springs, all which he holds to be partly from Vapors condensed into Dews, and partly from Rain and Snow; giving his Thoughts upon Mr. Halley's late *Hypothesis*; coming at last to what he thinks the most probable Causes of the Flood, viz. *The Changing the Center of the Earth at that time, and setting it nearer the middle of our Continent, whereupon the Atlantick and Pacifick Oceans pressing upon the subterraneous Abyss, by that means forced the Water upwards and compel'd it to run out at the wide mouths made at the breaking up of the Fountains of the Deep. These Waters thus poured out upon the Earth, the declivity being changed by the Removal of the Center, could not flow to the Sea again, but stagnate upon the Earth; and after the Earth returning to its old Center, these Waters return'd also to their former Receptacles.* He adds another *Hypothesis*, *That the Divine Power might at that time so depress the Surface of the Ocean, as to force the Waters of the Abyss through the fore-mentioned Channels, &c.* An *Hypothesis* like the former of these you will at the end of a Treatise, *de Potentia Restitutiva*, or of Springs publish'd by Dr. Hooke, anno 1678. pag. 50. Where, by the removal of the Center toward the Antipodes, he explains the appearance of several Islands in our Seas, by the Receipt of the Water; which formerly were not observed, &c. In the next place our Author speaking of the Effects of the Deluge, has a particular Chapter of formed Stones, Sea-shells, and the like Bodies found at distances from the shore, and brings the Arguments at large on both sides, for and against their being originally Shells, Bones, &c. to which being long, we refer: In which he owns himself not to be yet satisfied on either side: He adds the draughts of some of the most different kinds of these Bodies, and leaving the matter undetermined,

determin'd, proceeds to give some account of the Changes that have happened to the Earth since the general Deluge, as, the breaking off of some Islands formerly joyned to the Continent, some Places gained from the Sea, others cover'd by it. Other Changes happening to the Earth, by the sinking of Mountains, Changes by Earthquakes, where he touches upon that lately happening in *Jamaica*, and that in *England* in Sept. last, of which he observes the considerable Circumstances out of a Letter from Dr. *Robinson*, and as to Earthquakes in *England*, that they have been very short, and finisht at one Explosion, an Argument that the Cavities wherein the enflamed matter is contained are here very narrow. Other Changes have been caused in the Earth by extraordinary Floods, from long and continual Rains, others by暴风雨的Winds, and the like, which with some Remarks, that the Earth does not proceed so fast towards the levelling and general Inundation, as the force of these Causes seem to require: Concludes this second Discourse.

The Third Discourse being more *Theological*, and less related to the design of these *Treatises*, I shall be the more brief in the account thereof, and waving the beginning thereof, shall only observe, that our Author, in order to prove his Assertion of a general Dissolution by Fire, besides Scripture-proofs, and the Opinions of the Primitive Fathers, brings several from the ancient Philosophers, whose Opinions were, that the Dissolution of the World should be by Water and Fire, alternately at certain Periods; the Gods themselves not being free from these *Catastrophes*. Coming in the next place to the Question, Whether there be any thing in *Nature* that may probably cause or argue a future Dissolution? He grants to the *Peripatetics*, that supposing the ordinary Concourse of God with Second Causes, the World might endure for ever, there being no such Decay in *Nature* as might argue the contrary. Proceeding to Particulars, he examines the four probable Causes of such a Dissolution; first, as to the possibility of the Water, in process of time, overflowing the Earth; from the Steeple of *Craich*, in the Peak of *Derbyshire*, (formerly not to be seen at a certain distance, but now visible, by the sinking of an interposed Hill, which the Rains have gradually lessened and wash'd down; with some other Observations of the like *Nature*) he argues, that the Waters may at last level the whole Earth, and bring a total Subversion thereof; to which purpose is inserted a large Quotation out of *Josephus Blancanus*. For a second cause he alledges the Extinction of the Sun, instancing in some Observations of unusual defects and paleness of the Sun for a considerable time, and thinks it not impossible but the *Machia Solares* may so far prevail, as wholly to rob us of his necessary Influence. For a third Cause he brings the Eruption of the Central Fire, the possibility whereof he argues, particularly from new Stars appearing and disappearing, which Phenomenon he thinks may be so solved. A fourth Cause may be the dryness and inflammability of the Earth in the Torrid Zone, where by the way he explains what Fire is, and in the end rejects this Cause as insufficient. Coming to that Question, How this Dissolution will be effected; he answers, By Fire, and concludes it will be after a miraculous way, suddenly, &c. He determines not the Time, but allows it possibly at a great distance, and thinks it likely, that it will be a Renovation, and not an utter Annihilation, which he proves from several old Writers. And so much for the Philosophical part of this *Treatise*.

Leonardi Plukenetii *PHYTOGRAPHIA* seu Plantæ  
quamplurimæ novæ & Literis huc usque incognitæ ex  
varius & remotissimis Provinciis ipsiſq; Indiis allatae  
Nomine & Iconibus. *TABVLIS AENEIS* 130  
Fig. ferè 800 magnâ cum Industriâ & insigni sanè in  
successores beneficio Illustratæ. Fol. Londini, 1692.  
P A R S III.

**T**HE Curious in Botany must needs own themselves highly obliged, as well to the Industry as Sincerity of the most Ingenious Author, since what he formerly promis'd touching this Subject he now amply performs in this *Third Part*, enriching the World with a new Set of *Phytographick Tables*, which he humbly dedicates to His present *Majesty*, wherein he exhibits to publick view the Figures and Descriptive Titles of near 800 Plants, all different from what he published the foregoing year, and the greatest part of them hitherto either not describ'd, or not figur'd.

In this Work the judicious Reader may observe, that as there are really New and Non-describ'd *Species*, that will afford Entertainment and Diversion to the profounder Enquirers, and such as are in the upper Form of Botany; so there are others would be thought as such, to the unnatural encrease of the Faculty, whereby the Superficiary Proficients would for ever be deter'd from attempting to grasp at such an Immensity, did not the studied Care of our elaborate Author, in his stated References and *Synonymes*, contrast their Number, and reduce the Account of Botany to its just and natural Limits. A single Instance hereof (among many others) you have in the *Uvifera litorea*, &c. from *America*, or the Sea-side Grape, by those of *Barbados*, in *Tab. 235.* which although by many esteem'd as a new Plant, is really no other than the *Raisinier* of *Mons. Rochfort*, or *Oulier* of the *Charrubians Histoire des Antilles*. The same with *Obe* of the Dutch *Prodromus*, and the *Sideroxylum folio subrotundo* ejus'd. The *Arbor Insulae Tabago* *materie ligno Brasiliano simili*, *de Laet*. The *Papyracea arbor*, *Guajabara Barbaris*. *Hispanis Uvero*. *Jo. Baub. Copey in Insulâ Hispaniolâ* *Cap. Baub. Pinac.* and *populus rotundifolia Americana*, *Parkinson*; as any may perceive by the *Synonymous Titles*, subjoyn'd to the forementioned Table. So that here are no less than eight seemingly several and distinct Plants, united into one and the same thing; and were this Method duly observ'd in the whole course of *Phytology*, the History of Vegetables would not appear so bulky and unbounded, but any ingenious person might in some reasonable time take a full view of all its Heights and Depths, and utmost Extent, without the danger of Dizziness or Affrightment.

In these most excellent Tables you will find the Hallucinations and Mistakes of several Authors rectified, their Obscurities cleared up, and many other useful Illustrations, which I shall forbear to enumerate in this place; only of some of their particular Rarities we shall give the Reader a Specimen.

Besides the *Mexican Abies*, and that elegant Southernwood from *Portugal*, there is a whole Set of curious *Acacia*'s, most of them Thorny, yet some without Thorns, from *Java*, *Maderaspatan*, *Ceylon*, *Africa* and the *West-Indies*. The *Acacia Africana* *spicis candicantibus horrida*, &c. in Tab. 123. is the true *Egyptian Acacia* that the incomparable Botanist *Fabius Columna* raised of Seed at *Naples*, a Figure whereof he has given us with his learned Notes upon *Reccus*, pag. 866.

The *Acacia Abrua foliis*, &c. of the same Table, our Author thinks may be the same with the *Pratinus Palestinus* of *Bellonius*, which was supposed by him to be the Tree producug *Myrrhe*. *Obj. lib. 2. cap. 8.*

An *Acer foliis trifidis & quinquefidis Virginianum*, which by the Author is supposed to be the *Arbor Saccharifera Canadensis Indorum apud Cl. Rajum*. Hist. Pl. 1701. A pretty Myrtifoliate *Alnus* in the Appendix from *Bermudos*, in use among the Tanners. Several sorts of Maiden-Hair from *Narbon*, *Africa*, *Braſil*, *Barbados*, *Bermudos*, and some other Islands of the *Chariobees*. Four stately kinds of *Aloes* from the *Cape*. Various sorts of *Amaranthoides* from *Maderaspatan*, one with sharp Prickles along the Stalk, and a Thorny sort of *Alkanet* from the same place. There are no less than six sorts of *Anona*, with a critical distinction of them each from other. The *Benjamin-Tree*, with its Branch and Flowers, from the *Continent of Virginia*. The *Cubeb-Tree*, or supposed to be so from *Fort St. George*, as also from *Bengal*. A *Balsam-Tree*, from *Barbados*, call'd by the Planters *Spanish Ab.* As also a *Spanish-Oak*, from the same Island. A *siliqueferous Tree*, with the Leaves of *Beech*.

The Tree called *Mancinello*, being remarkable for its venomous Qualities, together with its Fruit: From this Tree a Juice is drawn so venomous, that you cannot touch it, but the Skin rises with great Pain, and becomes as black as though a hot Iron were applied to it. The *Arbor Stackiflua putata*, or a Tree that drops liquid *Myrrhe*, from *America*. The *Poyson-Wyth* of *Barbados*, which is a kind of *Bryony*. Three distinct kinds of the *Tree Pimento*'s, from the Islands of *Jamaica* and the *Barbados*. The *Flowering Beech* of *Virginia*, and the *Silver Chestnut*, which differs from the *Chinquapin* of the same place, and may be the *Leucomia* of Authors.

A new Family of the *Cenchrameda*'s, from *Barbados*; the Fruit of one of these may well be suspected that of the *Bellum* in *Lobel's Icons*, call'd *Balsam-Apple* by our Planters in *Barbados*. A *Cedar* of the same Island with the Leaves of an *Ab*. Sundry sorts of *Cherries* from *America*, *Arabia*, and the *Cape*. A wonderful *Cereus*, that creeps upon the Ground like a *Serpent*, from *America*. An elegant sort of *Christophoriana*, with the Leaves of *Malabathrum*,

called Nettle-Tree by those of Barbados. *Chrysanthema*, various kinds, both American, East-Indian, African, and Persian. A wild *Cinnamon* of Barbados, with unvein'd Leaves. Two wonderful *Cistus*'s, from *Virginia*, and one from *Ceylon*. Several strange *Colutea*'s, from the *East-Indies*, *Java*, *Madraspatan*, *Ægypt*, and *Veracruce in America*. As many *Convolvuli*, from *America*, *Jamaica*, *Virginia*, the *Cape of Good-Hope*, *Ceylon*, and *Madraspatan*.

The *Cordis Indi folio & facie frutescens Portoricensis Paradis*. Batav. Prod. whereunto belongs the *Quahmecatl* or *Zarzaparilla*, 2, & 3. Nov. *Hispan. Terent.* apud *Rece.* p. 289. as our Author has reason to suspect. That other *Cordis Indi folio & facie*, &c. from *Curassao*; to which he refers the *Aquitzli* of *New Spain*, apud *Rece.* p. 354. an elegant Tree called *Coralwood*. Strange *Cucumbers* from *Malabar*, *Madraspatan*, and from *America*. Several *Calibash-Trees* from the *East-Indies* and *America*. A Berry bearing *Dosdar*, from the Island of *Barbados*, perhaps the same with *Atatsavalli Hort. Malabar*, par. 7. And *Pearl-Tree* of *Surinam*, which is a kind of *Euonymus*.

The true *Ficus Indice arcuata*, and the Bearded *Fig-Tree*, from *Barbados*, both of the *Arbor de Raiz* kind, propagating themselves by stringy Fibres emitted from their Branches, which touching the ground, take Root, and produce new Trees. Several sorts of *Ferns*, some Natives of *England*, but never till now figur'd; three from *Africa*, two from *Virginia*, and one from the *Academick Garden of Padua*, as also in the *Appendix*; four more from the Island of *Bermudos*.

The *Manna Tree* or *Ash of Aleppo*, several most noble kinds of *Genista*'s from the *Cape*, and *Madraspatan*; some with Spines, others without. Six of the *Gossipium* kind, both from the *East* and the *West-Indies*. A multitude of exotick *Graffes* from most parts of the habitable World. A strange *Ilex* from *Virginia*, with tuberose Roots: And others of the same Family from *Madraspatan*.

Several *Laserpitiums*, with a critical distinction of each kind. Two sorts of *Silver Trees*, growing upon *Mount Atlas*; the first is said to be *Pomiferous*, the other is an *Epiphyllanthos*, both seem the Miracles of Nature. The *Silverwood* or *White-wood*, called by our Author *Leucoxylum*, is by him supposed the same with the *white Brasil*, or *Lignum Brasilianum*, *ut charta candidum* *Jonst. Dendrol.* 454. *Linscholen* tells us, 'tis whiter than either *Chalk* or *Snow*, *Ind. Or. P. 3. cap. 6.* It is a *Quinquefoliate* and *Siliquiferous* Tree, with winged Seed. The *Lignum Rhodium Tree*, called by the Planters of *Barbados* *Lightwood*, and *Lucinium* by our Author.

The various sorts of *Lycis*, from *Portorico*, *Candy*, and *Madraspatan*. The *Lyttimacha non papposa*, several kinds thereof from both the *Indies*. The *Mammea-Tree* of the *West-Indies*, which our Author suspects to be the *Arbor*, *Vinifera*, *Couton*, *Juglandis*, *Similia* of *John Banbire*, and the *Momin* of *Mr. Ogilbey*, which, as he relates, grows to the bigness of an *Apple-Tree*, the Fruit which it bears resembles a green *Cucumber*, of a pleasant Juice, the Skin always green and prickly, the Seed about the bigness of a *French Bean*, generally black, and streaked with golden-colour'd Veins. Two

Two sorts of the *Mangle-Tree*, of the *Arbor de Raiz* kind, though no Figg; the first is the *Partiuveir* of Monsieur Rochfort, the same with the Oyster-bearing Tree, that grows in *Sierra Liona* of *Purchas Navigat* Tom. 1. the true *Arbor de Raiz* of *Linschoten*, P. 4. *Ind. Or.* and one of the *Kandels* of *Hort. Malab.* The *Manihot Indorum*, or *Mandioca*, whereof the Indians make their Bread *Cassader*.

The *Angelina* of *Piso*, and Blackwood of those of *Barbados*.

A strange sort of a Milky Oleander, with a yellow Flower, the *Esnotli*, *Nov. Hispan. Tret. apud Reccum.* p. 443. A *Nymphaea* from *Maderaspatan*, with a Leaf like the larger Indian *Cresse*, but much stiffer, which our Author conceives to be a sort of the true *Colocasia* or *Ægyptian Bean* of *Dioscorides* and *Theophrastus*, whose Root was called *Colocasia*.

Several strange Nuts from *America* and *Ceylon*, and one kind intercommon to the Islands both of *Barbados* and *Ceylon*: As also another in the *Appendix*; that came from *Veracruce*. Two sorts of most fragrant *Basil's* from *Maderaspatan*. Various *Passifloræ*, from *Curassau*, *Brasil*, and other Parts of *America*. *Pentaphylloides* from *Sweden*, *Scotland*, and *Ireland*: A pretty *Myrtifoliate* *Periclimenum*, from *Maderaspatan*; and another from the same place. Another strange kind from *Zeylon*; a fourth from *America*, and a fifth *Variegata* in its Leaves from the Royal Garden at *Paris*. Great variety of *Phaseoli* from *Africa* and both the *Indies*; a long Pepper from *Brasil*; and several *Purples* both with and without Thorns, from the Summer Islands of *America*. *Plumbs* in abundance from *Barbados*, *Virginia*, *Malabar*, and *Maderaspatan*. Two sorts of *sebesten's*, the true *Eleminifera*, which is a *Plumm-Tree*, and that *Nucipruniferous*, which in *Barbados* they call the *Majick-Tree*. The *Sope-Berry*, which is properly a *Plumm*, or between *Nut* and *Plumm*, *Indian Damozan*, and the *Bully Bay*; the *Acaja* of the *Brasilians*, and *Icaco* *Plumm-Tree*, that has this peculiar, that thereon Birds as big as Jays, with black & gold-colour'd Feathers build their pendulous Nests. The *Rhamnus* from *Maderaspatan*, and the *Trifoliate Sumachs* from the Coast of *Africa*, are altogether new.

Two sorts of *Folliciferous* *Willows* from *Barbados*, and the *Sassafras-Tree*, with its *Fruit*, whose *Flowers* are like the male *Cornel*, of which for many Reasons it may well be esteemed a Kind. Its leaves break with araneous filaments, like those of *Scabious*, which is proper also to the *Cornels*. It flowers early in the Spring, before its Leaves begin to put forth, so does the *Cornel*; nor are their *Fruit* and *Qualities* unlike. Our Author takes this to be the same with the *Lignum Avis* ex *Orbe Atlantico adiectum Goropii Hispan.* lib. 7. An Ironwood from the *Cape*, and another from *Barbados*, which as it is the same mentioned in *Ligon*. It may also be the *Sideroxylon Charibbearum mucronatis-foliis* *Ogilb.* *Americ.* 371.

There are no less than seven strange *Syzygium* from *Africa* and *Ceylon*, a most elegant *Syringa* with winged Leaves like *Ash*, scandent, and with Claspers, from *Maderaspatan*. A golden-flower'd *Telephium*, from the *Cape*. The *Techo-*

*Techomala*-Tree from Mexico. Three strange *Therebinths*, the *Palamalatta dicta*, that with the Leaf of a Rose-Tree, and a trifoliate kind ; the *Palamalatta vulgo*.

Various *Thymelea*'s hitherto unknown, from several parts of the World, and *Tithymals* in abundance, from Ceylon, Mauritania, *Aethiopia*, Monomotapa, and the Island of *Curassau*. There is an Arborescent sort with a very large Leaf, no less venomous than the *Mancinello*, this is the *Tetlatia* of *Eusebius Nierembergius*, and by those of Barbados called the *Poyson*-tree. Another kind there is, called by some the *Mancinello Sylvestris*. There is a pretty sort of *Trifolium Supinum*, from *Maderaspatam*, with somewhat long Pods. This our Author thinks to be a kin to *Lotus*, and may perhaps be a kind of that *Melilotus Syriaca* s. *Chalepensis* major coronata siliquis biuncialibus *Morison*: *Icon. Sect. 2.* *Tab. 16. Num. 13.* As for *Viola*'s and *Virga aureas*, they are so numerous, and yet so new, that I must refer you to the Tables themselves ; the *Violas* are very curious indeed, and several staining Woods from Barbados are very deserving a more particular Remark ; as also the prickly *Xanthium* from the Kingdom of *Portugal*. But I am obliged to hasten, and therefore I draw up all into this Conclusion ; That sure it must needs be a great Pleasure to such curious Persons that have addicted themselves to the Botanick Studies, to see how far the Art it self has been cultivated and improv'd. By the single effort of an unassisted Industry, and how capable it is of farther Improvements, would the Age but propose a suitable Encouragement.

The Work is follow'd by an Explication of the abbreviated Names of Gardens, Books, and Authors, made use of in the Tables, as also a general *Index* to all the Three Parts of *Phytopraphia*.

Of the First and Second Part of the Authors *Phytopraphia*, published in the year 1691. there was an Account given in the *Philosophical Transactions*, N<sup>o</sup>. 193.

### L O N D O N :

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